

## APPENDIX 2

### SUMMARIES OF THEMATIC SESSIONS A, B, C and D

#### **I) Thematic Session A: Cities and Resource Efficiency and 3Rs**

After the introduction and overview of the session by the session chair, Ms. Yuyun Ismawati, Director of BaliFokus, Bali, city officials from five large cities in Asia – Jakarta, Nagoya, Quezon City, Seoul, and Phnom Penh – made presentations, followed by discussions. Each presentation highlighted the importance of various approaches based on the concept of resource efficiency and 3Rs (Reduce, Reuse and Recycle), as well as stakeholder engagement, to cope with the challenges of increasing municipal solid waste generation in rapidly urbanizing Asia. The following are the main messages from this session:

##### **1. Trends and waste management challenges for Asian cities**

Asia faces rapid urbanization in terms of share in world GDP (from 12% in 1960 to 25% in 2010), population living in urban area in Asia (41% in 1985 to 60% in 2015). This results in growing urban solid waste generation (from 0.76 million tons to 1.8 million tons) and increasing spending on waste management by local governments in Asia (from USD 25 billion now to USD 47 billion in 2025).

This is also true for cities in developed countries, where rising waste generation coupled with increasing levels of environmental awareness among citizens, lead to exhaustion of landfill capacity and difficulty in establishing new landfill sites, as encountered in Nagoya city, Japan, during the 1990s.

In terms of waste composition, the proportion of organic waste in most developing countries is high (for instance, 60% in Phnom Penh, 55.4% in Jakarta, 49% in Quezon city), but the non-degradable waste fraction (in Jakarta, paper consists 20.3% and plastics consists 13.3%) is also growing. Meanwhile, cities in developed countries and rapidly urbanizing communities are commonly burdened with increasing amounts of non-degradable waste, such as plastic packaging and electronic wastes.

## **2. Opportunities for adopting the 3Rs approach**

An increasing number of cities are becoming aware of the importance of the 3Rs approach in reducing the pressure on urban solid waste management in cities in both developed and developing countries in Asia. Cities demonstrated political will and priority in implementing 3Rs by setting targets and linking local policies to national strategies and regulations.

For example, Jakarta City has set a goal of 12% reduction in urban solid waste generation from 2007 to 2012. Phnom Penh City has introduced a 3Rs campaign among citizens, schools, and markets, which also includes wastewater management using appropriate technology. Since declaring a 'Waste Emergency' in 1999, Nagoya City managed to achieve 34% reduction in solid waste generation and 65% reduction in landfill through a series of radical measures. The experience of Nagoya City showed that the 3Rs approach can contribute to a significant reduction in final treatment, associated costs, and increase in resource recovery.

For less developed and rural areas, biogas generation can be considered as a decentralized approach for organic waste management and substituting unsustainable source of energy.

The concept of 'urban mining' is driving an emerging industry which extracts valuable materials from discarded waste electrical and electronic equipment (WEEE) products, such as gold, silver, copper, palladium, cobalt and other metal resources. With better collection and processing systems for WEEE products, end of life vehicles, and other metal-containing waste in cities, urban mining can be an efficient and economically-feasible method of waste recovery to address the issue of resource depletion. For example, Seoul city expects that the better collection and treatment of such waste streams would result in economic and environmental benefits such as in green design, job creation and CO<sub>2</sub> reduction.

## **3. Importance of partnership/ multi-stakeholders approach**

For successful implementation of the 3Rs approach and waste segregation in cities, a partnership approach based on multi-stakeholders engagement is essential. This requires constant efforts and continuous support from the city

government to engage and communicate with citizens and other stakeholders. Multi-stakeholder engagement is not only instrumental for training and overall implementation in pilot projects, but also for privatization of solid waste management and dissemination and transfer of good 3Rs practices from one community to another. Awareness campaigns needs to be followed up with necessary 'enabling systems' to produce the desired behavioural changes in people.

Phnom Penh City introduced the 3Rs approach as part of school education. This has resulted in rising awareness not only among those involved directly in 3Rs activities, such as children and teachers, but also further among persons such as parents and the whole community, chiefly through better communication from those engaged directly in 3Rs to their surrounding people.

In addition, the informal sector plays a significant role in waste management and resource recovery activities in many urban areas of developing Asia. Thus, the careful engagement and integration of the informal sector in municipal solid waste management with supervision by local governments can be beneficial for both parties as highlighted in a presentation by Quezon City. Cities save costs for waste management, while local communities are empowered by having access to a secure source of livelihood and a better working environment, which could lead to improving both human health and environment, eradicating poverty and achieving MDGs.

#### **4. Conclusions**

Improved coordination between central and local policies with support from stakeholders such as NGOs can result in more successful implementation of the 3Rs policies and the replication of good practices. Central governments and NGOs can play a key role in identifying best available technologies and best environmental practices in the country and informing other local governments about key success factors. Pilot projects based on local good practices can be implemented and subsequently scaled up and integrated into mainstream policies and practices.

The issues regarding hazardous wastes/recyclables should be given proper consideration in the waste management policy and systems, including the

proper enforcement of environmental and health standards.

To realize ESC in Asia, it is crucial to set standards, benchmarks, and targets to upgrade and modernize current practices and forms of waste management into sustainable urban solid waste management.

## **II) Thematic Session B: Climate Change Adaptation through Sustainable Urban Development - Challenges and Opportunities**

This session was chaired by Mr. Allen Kearns, Deputy Chief of Commonwealth Scientific and Industrial Research Organisation (CSIRO), Australia. Presentations were heard on how the cities have approached challenges of adaptation and how solutions can be achieved through sustainable urban development. Key issues and messages emerging from this session are summarized as follows:

### **1. Governance**

It is important to recognize and choose urban policies that are best suited for implementing regionalization. Success has been achieved in projects that have recognized that governance and investment issues need to be engaged with at the local scale. Once achieved, replicating this knowledge outwards through partnerships and urban networks.

### **2. Knowledge Management**

Forming knowledge frameworks, such as a City Development Strategy, can be a useful guide for cities and governments to follow. Use of new technologies, such as Sea Level Rise modeling in Makassar, Indonesia has measured the sea level rises over 100 years. This study can now be used for assessing new coastal developments and renewing urban infrastructure. Free technology, like Google Earth, is being used for spatial analysis of Climate Change. This was raised as being an affordable tool for cities to use for planning.

### **3. Investment in Infrastructure and Information**

The potential of using integrated urban water management as an analysis framework for investment priorities was highlighted. It was also noted that

policies and techniques for urban spatial management can contribute towards enabling economic growth for cities, which should be communicated to decision makers.

#### **4. Measuring the Performance of Environmentally Sustainable Cities**

Cities recognized the need to question and determine which kinds of urban policies are best suited for ESC. Low carbon targets can drive innovation in design and technology. For example, USAID's project of 'Twinning Partnerships' between cities in different ASEAN countries compares performance between cities and provide analysis for future projects. The 'no regrets' approach provides co-benefits that can be economically assessed for their value.

#### **5. Capacity Building and Planning for Integrating Climate Change Adaptation into Cities**

It was recognized that using smaller areas to start adaptation and sustainable development projects, and then extending these out to surrounding areas is an effective approach to city development and integration. 'Twinning Partnerships' between cities can help build professional capacity for infrastructure development.

#### **6. Community Engagement**

A project which involved cooperation with local villagers on developing traditional houses was highlighted as a successful approach. This demonstrated that new urban innovation and design can be based on traditional knowledge. Throughout the session, there was an emphasis on engaging with the local people of the community in long term city planning. A participant pointed out 'they still live there after the politicians leave office'.

#### **7. Conclusions**

Climate change is just one of many adaptation challenges facing government, community and industry. Three overall responses to managing climate change were highlighted: i) climate mitigation – “avoiding the unmanageable” e.g. by using low carbon technologies at large scale; ii) climate adaptation – “managing the unavoidable” through better planning, risk assessment and using climate scenarios for urban and coastal development; iii) climate suffering – the consequences on people, ecosystems and infrastructure from not taking

effective action in response to climate change and extreme events.

### **III) Thematic Session C: Cities and Biodiversity**

The session chair, Mr. M. S. Sembiring, Executive Director of Kehati Foundation (Biodiversity Foundation), Indonesia, provided an introduction on the key challenges faced by cities in achieving sustainable development and safeguarding biodiversity posed by urbanization, climate change and the related complexities of urban planning and management

The first four presentations from three cities (Waitakere, New Zealand; Sibu, Malaysia; and Puerto Princesa, Philippines) and a province (West Java with a case study on the city of Bandung) highlighted their experience in conserving and managing biodiversity in the context of the challenges outlined. This was followed by a presentation on a potential tool to assist cities to evaluate their biodiversity conservation efforts by Singapore and a presentation by Nagoya on their biodiversity strategy and preparations for the 10<sup>th</sup> Conference of Parties (COP-10) to the Convention on Biological Diversity (CBD) and the City Biodiversity Summit, both to be held in October 2010 in Nagoya. The following key messages were heard:

#### **1. Governance**

Cities acknowledged the importance of good governance which incorporates the following elements: i) political commitment; ii) good coordination and transparency; iii) ability to garner multi-stakeholder participation; and iv) awareness of the economic impact of policies and programmes. The need to have local autonomy over environmental issues was also highlighted in the presentation by Puerto Princesa.

## **2. Partnerships**

There were many examples of 3P (Public, People and Private) sectoral partnerships presented throughout the session. Sibul's presentation focused on private sector partnerships, while Puerto Princesa and Waitakere highlighted their partnerships with the local communities ("people" sector).

## **3. Learning through Sharing of Experiences**

The sharing of experiences and best practices of cities, in terms of approaches, techniques, tools, methods, etc. allow for other cities to learn or adapt from such success stories/ cases. Some examples shared include:

- Retrofitting stream habitats (Waitakere), riverbank rehabilitation (Puerto Princesa)
- Greenfield concept planning (Waitakere)
- Watershed based planning (Bandung)
- Vertical development (Bandung)
- Ecological network approach (Bandung)
- Smart partnerships in particular with the private sector (Sibu)
- "Protect, Rehabilitate, Plan" management philosophy (Puerto Princesa)
- Puerto Princesa Watch – includes the Forest and Bay Watches
- Developing a biodiversity strategy/ plan (Waitakere, Bandung, Nagoya)
- "One Village, One Playground" (Bandung)
- Urban agriculture (Bandung)
- Awareness (all cities have good examples of awareness programmes, employing different approaches)
- City Biodiversity Index/ Singapore Index on Cities' Biodiversity – a self-assessment tool for cities to evaluate their biodiversity conservation efforts

## **4. Conclusions**

It will be useful for cities in this region to share their experiences with a wider network – for example at the City Biodiversity Summit, and with other networks such as ICLEI-Local Action for Biodiversity. Cities should also support the work of the Global Partnership on Cities and Biodiversity which is under the

framework of the Convention on Biological Diversity (CBD). The session also highlighted the increasing recognition at the global level of the role of cities and local authorities in biodiversity conservation (for example, Decision IX/28 of the CBD). At the 10<sup>th</sup> Conference of Parties (COP-10) of the CBD later this year in October, a draft decision will be considered on Cities, Local Authorities and Biodiversity, which includes a draft Plan of Action. It is proposed for Parties to support such a decision.

#### **IV) Thematic Session D: Cities and Low Carbon/Low Polluting Society**

The session commenced with a brief overview by the session chair, Mr. Hideyuki Mori, Vice President of the Institute for Global Environmental Strategies (IGES), Japan, on the twin challenges of pursuing pollution and low carbon urban development faced by Asian cities, as well the extreme vulnerability of the region towards the adverse effects of climate change.

The first three presentations introduced cases from Japan, Indonesia and India, focusing on the potential opportunities for low carbon and low-polluting interventions in the transport sector through strategies such as Transit-Oriented Development (TOD) in Japanese cities and an award-winning Bus Rapid Transit (BRT) system in Ahmedabad. Next, the session heard presentations on the promotion of environmental protection and pollution reduction measures in Lin'an city (China) and the support policies by the central government, a public-private partnership landfill bio-gas project in Daegu (Korea), as well as models and diverse initiatives for long-term city planning using a multi-stakeholder participatory approach in Auckland (New Zealand) and in the Eco-Model City of Kitakyushu (Japan) towards ESC. From this session, the following main points, particularly on the key elements for achieving ESCs, were summarized:

##### **1. Governance**

Clear mandates and responsibilities of local governments are essential to enable pro-active actions by cities. In this respect, coordination between the central and local authorities is critical. Also important is constructive collaboration among local authorities concerned (Auckland) to develop consistent policies and



approaches among them.

Facilitation of the central government to promote environmentally sustainable transport (EST) is effective in clarifying specific roles to be taken by city governments, as how climate change and other global environmental issues are to be handled at the local level is uncertain. In this respect, the model eco-city programmes adopted in China and Japan is considered useful.

## **2. Multi-Stakeholder Local Participation**

Participation of local communities is critical for better decision making and sustainability of specific actions taken, despite the fact that it sometimes take substantial time and resources. (Auckland, Kitakyushu). The participation of local businesses is also essential in particular for efficient implementation of specific actions. This was highly evident in cases in Kitakyushu, Auckland, Ahmedabad and Tokyo.

## **3. Policy articulation**

Development of a long-term environmental plan with clear quantitative targets, its incorporation in the city master plan and other policy measures for effective implementation, and monitoring of the progress made are the most important actions a city can take.

Formulation of a roadmap, consisting of short-term (traffic demand management in Jakarta), medium-term (local low carbon energy system in Lin'an) and long-term (transit oriented development in Tokyo) measures, is the next step.

Policy integration is necessary to promote effective measures in a sustainable manner. A good example is TOD in Tokyo, where full integration between transport and land use policies is indispensable. Policy mix is also crucial; various policies need to be implemented at the same time, which include strict pollution control (Lin'an), use of soft loans (Ahmedabad) and direct public investment (Kitakyushu, Lin'an).

## **4. Knowledge Sharing**

Knowledge sharing is an important driving force to promote motivation for the formation of ESC. It is observed that knowledge sharing is taking place in

different modes as follows: i) South-South: BRT (Ahmedabad, and Jakarta) and compressed natural gas (CNG) (Ahmedabad) are clear cases where South-South knowledge sharing has taken place. Since these measures have already been successfully introduced by some cities in developing countries, replication is more likely than North-South knowledge sharing; ii) National networking: The Model Eco-city Program introduced in China and Japan is considered instrumental in spreading knowledge and experiences with other cities within a country; and iii) Regional collaboration: Cities such as Kitakyushu are committed to share knowledge and experiences with other cities in Asia, thereby promoting cross-border inter-city knowledge sharing.

## 5. Innovative Finance

Various forms of the private sector financing are increasingly being adopted by cities through public-private partnerships. Build-Operate-Transfer (BOT) is adopted in Daegu, TOD in Tokyo which is basically fully supported and operated by the private sector, while the BRT in Ahmedabad is partially funded by the government (through the construction of BRT lanes) and operated by a bus company. Other innovative financing mechanisms include road pricing and number plate bidding practiced in Singapore are innovative mechanisms to generate funds for cities. The eco-points programme introduced in Japan is a mechanism to encourage environmentally conscious behavior among consumer.

## 6. Conclusions

Basic approaches and the overall context in which the seven cases presented at this session have several elements in common, such as i) Co-Benefits: Meeting important local needs such as local economy (Kitakyushu), social concerns such as poverty (Ahmedabad, Jakarta), and local pollution issues (Auckland, China, Korea) is the overriding concern among local governments. Climate change can be addressed in a sustainable way only when these local concerns as well as climate change concerns are simultaneously dealt with; ii) Green Economy: In the context of the green economy, innovative finance mechanisms are attracting increasing attention. Various forms of the Public Private Partnership (PPP) and Clean Development Mechanism (CDM) are some of such examples; iii) Decentralization: More responsibilities are being devolved to cities with regard to environmental management, city planning and land use, waste management, and local transport, but this is happening in the face of insufficient capacities in

terms of financial as well as human resources.